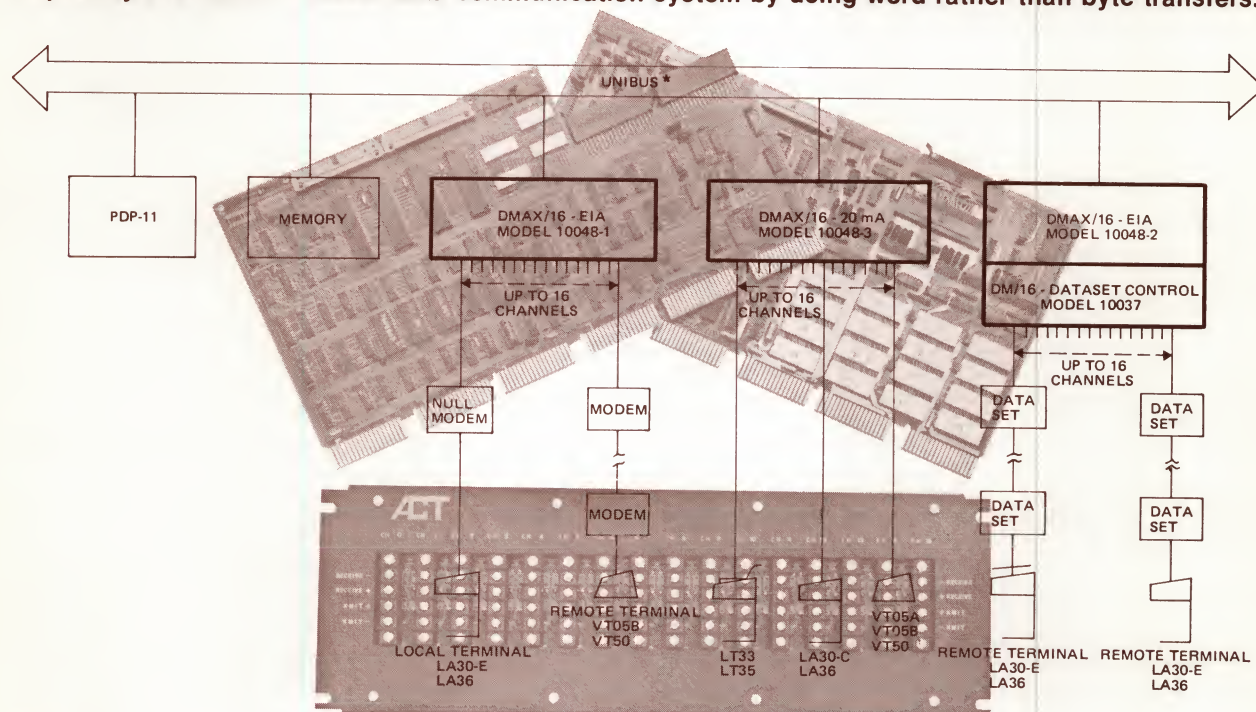


# DMAX/16™ (DH11 Replacement)

The DMAX/16 is a fully buffered, programmable DMA multiplexer that doubles the data transfer rate capability of a PDP-11\* based data communication system by using word rather than byte transfers.



## FEATURES

- Like the DEC\* DH11, DMAX/16 provides DMA output capabilities thus freeing the processor from interrupt handling
- DMAX/16 uses word rather than byte data transfers which doubles data transfer rate capability over the DH11 or cuts Unibus time in half
- Requires only two hex slots rather than a dedicated nine slot backplane
- A built-in external clock allows on-board baud rate selection — no clock cards required
- No output to terminals in loopback maintenance mode prevents unwanted data from being printed on the terminal
- Supports 19.2K baud rate
- The DMAX/16 can be easily installed in an SPC backplane — no backplane modification needed.

## GENERAL DESCRIPTION

The DMAX/16 is a microprocessor based controller which connects a PDP-11 to 16 asynchronous communications lines and provides DMA (direct memory access) output capabilities. It is system software compatible with the DEC DH11.

Physically, the DMAX/16 is comprised of a modified hex-width control board, a hex-width data board, a distribution panel, and interconnecting cables. One model also includes a dataset (modem) control board. DMAX/16 can be installed in any standard DEC DD11 peripheral mounting panel.

## PROGRAMMABLE LINE PARAMETERS

Character Length	5, 6, 7, or 8 bits
Number of Stop Bits	1 or 2 for 6-, 7-, or 8-bit characters 1 or 1.5 for 5-bit characters
Parity Generation/Detection	Odd, even, or none
Operating Mode	Half or full duplex
Transmitter/Receiver Speed (Baud)	0, 50, 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400, 4800, 9600, 19.2K (was Ext. A), External B

Breaks may be detected and generated on each line.

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10048X08-1279

We reserve the right to improve our products at any time.



## DIAGNOSTIC COMPATIBILITY

The DMAX/16 is compatible with the following diagnostics provided by DEC.

- ZDHA DH11 Static Logic Test
- ZDHB DH11 Memory Test
- ZDHC DH11 Receiver and Transmitter Logic Test
- ZDHD DH11 Speed Selection Test\*
- ZDHE DH11 Character Length & Basic Data Test
- ZDHF DH11 Single Line Data Test
- ZDHG DH11 Multi-line Data Test
- ZDHH DH11 Auto-Echo Test
- ZDHI DH11 Break and Half Duplex Test
- ZDHJ DH11 Echo Test
- ZDHK Modem Control Multiplexer Diagnostic
- ZDHN DH11 Data Reliability Test/Single Line Echo & Patterns/Cable Test
- ZDHM DH11 Diagnostic\*

\*Note: The external clock frequency must be set at 200 baud.

## SPECIAL CONSIDERATIONS

The DMAX/16 provides substantial savings in space and cost due to its unique design. The design incorporates USART's with internal baud rate selection and an on-board external clock frequency. With the external clock set to 200 baud (factory setting) the DMAX/16 provides the user with the same baud rate selection as the DEC DH11 and additionally provides 19.2K baud without an external clock board. For users not requiring the 200 baud rate, the external clock frequency offers the advantage of a wide selection of frequencies (0 to 18.0K baud) without adding separate clock boards.

Special applications that require different speeds for receive and transmit (split baud rates) are handled differently from the DH11. The internal baud rate selector of each USART is used to set the speed of either the receiver or the transmitter in the usual manner. The other speed is obtained by adjusting the external clock frequency to the appropriate speed and programming External B (1111) into the Line Parameter Register. (Note that all channels which use External B share the same external clock frequency.) This method of split baud rate selection is suitable for most applications; check with the factory if in doubt about implementing split baud rates for your application.

ABLE has created a veritable store of DEC computer enhancements. ABLE's unique products help you get more out of your PDP-11. Look at our current product listing . . . you will find solutions of genuine value.

### SPECIAL MEMORY PRODUCTS

SCAT/45 (330 nsec Fastbus Memory)  
CACHE/45 (2KB Fastbus Cache)  
CACHE/434 (8KB Unibus Cache)  
CACHE/440 (8KB Unibus Cache)  
EMULoader (ODT/Boot Loader)

### GENERAL PURPOSE PRODUCTS

QNIVERter (Dual-Purpose Converter)  
UNIVERter (Converter with Map)  
REBUS (DB11-A Replacement)  
DUAL I/O (Dual DR11-C)  
INTERLINK (DR11-B Replacement)  
BUSLINK (DA11-B--Unibus/Q Bus)

### COMMUNICATIONS PRODUCTS

QUADRASYNC (4-line DL11)  
QUADRASYNC/E (4-line DL11-E)  
QUADRACALL (4-line DN11)  
DMAX/16 (DH11 Replacement)  
DV/16 (DV11 Replacement)  
DZ/16 (DZ11-E Replacement)

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## ORDERING INFORMATION

Model (DEC #)	ABLE Order Number	Description
Basic Board Set (Not offered by DEC)	10048-0	Modified hex-width control board, hex-width data board, interconnecting cables, test cables. Two Berg connectors on the data board provide for connection to a distribution system.
EIA Version Without Dataset Control (DH11-AE)	10048-1	Basic Board Set plus EIA distribution panel and interconnecting cable. Does not include cables for local connection of EIA/CCITT terminals; use BC03M-XX series cables.
EIA Version With Dataset Control (DH11-AD)	10048-2	Basic Board Set plus EIA distribution panel and interconnecting cable. Includes hex-width dataset control board and interconnecting cable. Does not include dataset cable; use BC05D-25. Use BC03M-XX series cables for local connection of EIA/CCITT terminals.
Current Loop Version (DH11-AA, DH11-AC plus 4 DM11-DA Line Adapters)	10048-3	Basic Board Set plus 20 mA current loop distribution panel and interconnecting cable. Does not include cables for terminal connection.

## SPECIFICATIONS

Bus Loading: The DMAX/16 presents less than two unit loads to the Unibus: one receiver and two drivers.

Power Requirements:

Model	Voltage	Current
10048-0	+5 volts ±15 volts	8.0 amps 0.25 amps
10048-1	+5 volts ±15 volts	8.0 amps 0.25 amps
10048-2	+5 volts ±15 volts	10.3 amps 0.75 amps
10048-3	+5 volts ±15 volts	8.0 amps 0.75 amps